Tennessee Pollution Prevention Partnership Success Story

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Sustainable Paving Activities

The Member

The Y-12 National Security Complex is a high-precision manufacturing, assembly and inspection complex comprised of numerous facilities and more than 20 organizations located on 800 acres near Oak Ridge, Tennessee. Operated by Babcock & Wilcox Technical Services Y−12 L.L.C. (B&W Y-12) for the National Nuclear Security Administration, Y-12 plays a vital role in the Department of Energy's (DOE) Nuclear Weapons Complex.

The Story

B&W continually searches for ways to implement sustainable practices in order to reduce the potential environmental impacts from complex operations. There are over 33 miles of road and over 71 acres of parking lots on the Y-12 Complex. Y-12 has implemented a variety of sustainable paving practices in order to reduce the potential impacts of paved surfaces.

The Success

In Fiscal Year 2011, Y-12 constructed a new bypass road and applied an innovative reuse technique to prevent landfill waste and storm water erosion. A grinder was brought on-site to create approximately 1,500 cubic yards of mulch from the trees and brush that were cleared for the new road. This mulch was then placed inside of fabric bags for use as erosion control devices. The bags were filled in ten foot sections that were used in place of traditional silt fencing for erosion control. The bags were found to be very effective. Once the project was completed and the vegetation was established, the bags were opened and removed while the mulch was spread for use in the area. The project illustrates the reuse of natural resources in order to protect other natural resources.

Warm mix asphalt with recycled asphalt product content was utilized for parking lot paving activities. Warm mix asphalt saves energy and reduces associated greenhouse gas emissions because it is not heated to as high of a temperature as traditional hot mix asphalt. The asphalt that was used for Y-12 paving activities contained approximately 1,913 tons of recycled asphalt products. Approximately 7,630 tons of asphalt that was removed as a part of paving activities was milled and reused in place of aggregate on other non-paved roads and surfaces. Y-12 also removed paved surfaces that were no longer needed and reseeded the areas.

Roller compacted concrete and sustainable coating materials were utilized in other areas to increase the surface reflectivity to reduce the potential heat island effects of paved surfaces.

The Pollution Prevented

Y-12 reused over 16 million pounds of asphalt and wood materials.

January 2012